

ART. XVI.—*The Transactions of the American Medical Association*—Instituted 1847. Vol. VII. Svo. pp. 668. New York, 1854.

THE seventh annual session of the American Medical Association, held at St. Louis, Mo., in May, 1854, was opened, in the absence of the President, Dr. Knight, of Connecticut, by a short address from the senior Vice-President, Dr. Usher Parsons. This address, prepared at a very short notice, is very concise, but at the same time neat and appropriate. It presents, however, no prominent points or topics which require especial notice.

The printed transactions of the session, as presented in the volume before us, comprise a fewer number and a less variety of strictly medical reports and papers than those of several of the preceding sessions. They are comprised, in great measure, of three reports on the epidemics prevailing in certain sections of the United States; a report on erysipelas, one on the medicinal and toxicological properties of the cryptogamic plants of our country, and the prize essay of Dr. Brainard, on the treatment of ununited fractures. These, nevertheless, form a volume replete with interesting and valuable matter; a volume that will reflect no discredit upon those who contribute the several papers it comprises, nor upon the Association under whose auspices they have been given to the world.

The first of the reports contained in the present volume is that on Medical Education, from the pen of Dr. J. L. Cabell, of Virginia. It is a well written, sensible paper.

Confining himself to "a recapitulation of the several particulars in respect to which the system of collegiate medical education in the United States has been the subject of unfavourable criticism, and to an inquiry in regard to the extent to which the measures hitherto taken by the Association have had the result of removing or lessening the defects against which they were directed," the author, with a great deal of candour, and in an independent spirit of criticism, discusses the character and sources of the defects referred to, the causes which have heretofore impeded their removal, and the means best adapted to overcome these impediments.

Among the defects in the existing system of medical education in the United States, Dr. Cabell places prominently "the want of a proper preliminary education on the part of a large, we fear a constantly increasing proportion of medical students." In concluding his very pertinent remarks on this topic, Dr. C. has no doubt that—

"The Faculties of all the most respectable schools of medicine in the Union, are truly anxious to conform to the recommendation of the Association in respect to the measure of proposed reform in respect to the preliminary education of matriculants; and would cheerfully submit to some pecuniary sacrifice, if there were a reasonable guarantee that the desired end could be thereby attained. But as the imposition of rigorous conditions of matriculation by a few of the schools will, it is believed, have no other result than to draw a large proportion of their students to such other institutions as will exact from the candidates for graduation but slender requirements of labour and of learning, it seems scarcely reasonable to hope that, under existing circumstances, the principal medical schools should adopt a policy which threatens to prove so ruinous to their interests, while it offers no compensating advantage to the profession at large."

After noticing the fact that, in some of our medical colleges, the Faculty is

not clothed with the authority of prescribing the conditions of matriculation, Dr. Cabell asks:—

“Is there, then, no remedy for an evil which has done so much to dishonour a profession once noted for the profound and varied learning of its members? Your Committee,” he replies, “are of opinion that it would be premature to come to so discouraging a conclusion. They do not yet abandon the position which was ably sustained by the late Dr. Parrish, in a report made to the Philadelphia Convention, that ‘the influence of combined and harmonious action, directed to a special object, by the great body of the profession, is a power more potent than that exercised by legislatures, or by the corporations they may create.’ The operation of such an influence is, however, slow, and we should not be impatient if ample results are not rapidly attained. One of the instrumentalities through which it operates is gradually being brought to bear upon the solution of the difficulties which thwart the attempts that have hitherto been made to introduce this and other measures of medical reform. We allude to the organization of State and County Medical Societies, the manifold usages of which agencies are too obvious to require exposition.”

The next defect noticed by Dr. C. is the shortness of the annual lecture term in our medical colleges.

This subject is examined with much care, and in a commendable spirit. The arguments that have been presented in favour of a continuance of the present term of four months, and the objections that have been urged against any further extension of it, are candidly discussed; while the separate and appropriate duties, in the education of the medical pupil, of the private and professorial instructor are briefly considered. The general conclusions at which Dr. C. has arrived in reference to these important topics will be understood from the following extracts:—

“The weight of education must fall, unquestionably, upon the pupil; and any system, whether that of public lectures or private preceptorship, which aims to dispense with constant and hard labour on the part of the pupil, is mischievous in proportion to its success. The question is not whether teaching by lectures be better than active personal study, since these are by no means incompatible, but whether personal study will be most advantageously aided and directed by a judicious course of instruction by lectures, or by ‘private preceptorship mainly,’ with ‘the school as its complement.’” The Committee “are firmly convinced that ‘the active, practical discipline of the mind,’ is one of the most certain results of the right use of the system of teaching by lectures.” “Under this system, the intelligent student, following in the train of thought pursued by the lecturer in his discussion of doubtful questions, in his analysis of complex phenomena, and in his inductions of general truths from particular facts, learns to perform for himself the works, so difficult to those who have only studied by a mechanical routine of unreflecting labour—of critical analysis, and inductive generalization.

“In order, however, to insure the full success of this system by a right use of it, and by preventing that abuse which is truly obnoxious to the criticism of the medical Faculty of Harvard University, and which, unhappily, is too prevalent, it is indispensable that searching examinations should be given, each day, on the lectures of the preceding day. It is this combination of the two systems which is productive of the most wholesome results. Those who have had experience in this matter know how wonderfully the faculties of mind are stimulated in listening to a discourse on the topics, arrangements, and illustrations in regard to which we expect to undergo a public examination.” “If the teacher propounds his questions, as certainly he should, in such a form as to throw upon the student the burden of analyzing a complex subject submitted to him for elucidation, it is impossible to exaggerate the benefit which the latter may derive, both in giving precision and completeness to his knowledge of the particular subject, and in the mental discipline which is incidental to the process employed in its acquisition. It must be evident that such examinations

will be more useful if conducted by the lecturer himself, than if left to the performance of a third party, especially if the latter did not himself hear and enter into the spirit of the lectures."

"The Committee do not suppose that more than a very few of the existing medical colleges will adopt a system so radically different from that in connection with which they have enjoyed, and continue to enjoy, a large measure of public patronage; but they do believe that new institutions, the incorporation of which, by legislative authority, the profession is utterly powerless to control, will be induced to make an experiment, the success of which, as regards the thoroughness of the instruction given to the pupil, cannot be doubtful. At all events, the Committee feel it to be their duty to recommend such a system of medical education as, in their opinion, may comport with the existing state of the medical sciences, and satisfy the reasonable demand of the profession, rather than to speculate upon the probability of its adoption by the medical schools of the Union."

"For that class of students who reside in our cities, and enjoy the advantages of private instruction by competent and zealous teachers, possessing all the necessary appliances for practical illustrations, a shorter course of public lectures may not only be sufficient, but, in some instances, preferable. But as respects that far more numerous class of students who come from the rural districts, the case is very different. Many of these pass the interval of eight months, between the end of the first course and the commencement of the second, in desultory reading, and without the benefit of suitable instruction or guidance. This course cannot be otherwise than detrimental; and, for the benefit of all who pursue it, an extension of the term is urgently needed. The Committee would therefore suggest the expediency of some action on the part of the Association, by which encouragement will be held out to such schools as may be willing to make trial of a reformatory plan, the general features of which are as follows: 1. The extension of the term to eight months, with not more than four lectures per diem at any period of the course, and not more than three during the dissecting season. 2. The exclusive assignment to such schools of the whole groundwork of elementary medical education, and the subsequent transference of the advanced pupils to schools, whether private or public, in which they should be taught to make practical application of the principles which they had previously acquired."

The third defect in the existing scheme of medical instruction, to which attention is directed, is "the omission, in the curriculum established by many of our medical colleges, of one or two important branches of knowledge." The pertinent remarks of Dr. C. under this head prove forcibly the correctness of his conclusion, that this omission is "an evil which, in the present state of the medical sciences, and in view of the relations of the medical profession to society, imperatively calls for redress."

The fourth defect considered is, the entire neglect, or very imperfect use, of clinical instruction in many of the medical colleges of the United States.

"As respects some of these institutions," Dr. C. admits "the defect is irremediable, owing to their location in villages too small to furnish subjects for hospital practice. And in some of our larger cities, the seats of the oldest medical colleges in the Union, the hospitals are either entirely inaccessible to the student, or are opened to him under such restrictions as to make it a privilege of little value. In such cases, the schools have been driven to the necessity of finding a substitute in what are termed 'college clinics.' But, even where no other impediment hinders the students from visiting the hospitals daily, those who attend six lectures each day in the college, and are also engaged in the study of practical anatomy in the dissecting-room, can find little time or disposition for such clinical observations as will be of any value to them. Hence, it is only the small minority who remain in the city during the summer that truly derive any profit from the facilities for clinical observation which the city hospitals may afford.

"We have almost invariably found that, among even this class of students,

only those who have previously graduated can be induced to read, in connection with their clinical observations, the class of books which constitute the elucidators of disease. The undergraduates feel themselves constrained, by the prospect of a coming examination, to confine their reading mainly to the elementary text-books. In view of such facts, your Committee express their hearty concurrence in the position taken by Dr. Pitcher, in his report, and indorsed by the vote of the Association, 'that a familiar knowledge of the elements of medical science should precede clinical instruction.'"

The last defect noticed by Dr. C. is one which he very properly stamps as "the most flagrant and mischievous of all the defects of American medical schools, the correction of which is essential to the attainment of much or any benefit from any other projected measure of reform." This defect is the "disgracefully low standard of professional knowledge and general mental culture exacted of the candidates for the degree of Doctor of Medicine."

"The evil in question," Dr. C. remarks, "having originated, in a great measure, in the active competition of rival schools, some have contended that it can only be remedied by diminishing the number of these institutions. If this were so, we should be obliged to abandon all hope of relief, and submit to a perpetuity of disgrace; for those institutions now possess chartered rights, which it cannot be expected that they will relinquish. Nor is it probable that more good than harm would ensue from a diminution of the number of the schools. If students could obtain admission into the ranks of the profession *only* after giving satisfactory proof of attainments and mental discipline as would test the thoroughness and the judicious character of the instruction they had received, the rivalry between the separate schools would consist in efforts to elevate the standard of medical education by enlarging the curriculum with the progressive advancement of the medical sciences, and by perfecting the means of illustration and exact demonstration. The only available remedy, then, in the opinion of the Committee, is the establishment of boards of examination, distinct from the Faculties of the schools. It does not suffice to have a committee of the State Society present at an examination conducted by the Faculty of the school. The desideratum is to have a uniform standard throughout the Union, or throughout the limits of each of those States in which such a board may be appointed."

"In those States in which there are no laws regulating the practice of medicine, and where, consequently, the collegiate diploma has no legal character, its value being solely due to the popular appreciation of it as a certificate of professional attainments from those who are supposed to know the character of the graduate, and are presumed to give truthful testimony, it seems reasonable to believe that the united voice of the profession would be as potent in exacting the possession of a license from an extra-collegiate board of examiners, duly appointed in conformity with a general plan sanctioned by the American Medical Association, and adopted in all the States of the Union, as it now is in inducing young men to procure a collegiate diploma which is not necessary to legalize the practice of their vocation."

Dr. C. considers that the reflected influence upon the schools of the operation of this board of examination, in inducing them to elevate their standard lest they should be discredited by the wholesale rejection of their graduates by the licentiate boards, would be of immense service, although a majority, or a large proportion of their graduates might refuse to undergo the additional test. This is precisely the way in which Dr. C. expects the plan to work most favourably for the cause of medical education.

Dr. Cabell concludes his report by presenting for the consideration of the Association the following resolutions, as a summary of the principal views embodied in the report:—

"1. *Resolved*, That the views and recommendations heretofore expressed by this Association, respecting the importance of establishing a uniform standard

of preliminary education, of extending the term of lectures, and especially of greatly elevating the standard of professional attainments requisite to graduation, be hereby reaffirmed.

"2. *Resolved*, That this Association approves and recommends the practice of daily examination by each professor, as essential for securing 'that active, practical discipline' of the mind, which is one of the most important ends of collegiate instruction; and believes, not only that such a system might be easily put into operation, under an extension of the term of lectures, but that the whole groundwork of elementary medical instruction might be most advantageously assigned to the schools which may adopt that system, as a substitute for the very faulty one of private office instruction now in common use.

"3. *Resolved*, That this Association cordially approves of the establishment of 'private schools,' duly organized, for giving that species of instruction which consists 'in demonstrations,' and other practical exercises 'on the part of the student, instead of the instructor, but still under his direction and superintendence,' embracing the whole circle of clinical observation and practice, the use of the microscope, chemical manipulations, and the performance of surgical operations on the dead body; and would earnestly recommend such institutions to the patronage of those graduates who did not enjoy similar advantages during the period of their collegiate pupilage.

"4. *Resolved*, That those medical colleges whose curriculum does not now include full courses of lectures on physiology and medical jurisprudence, be earnestly invited to make immediate provision for supplying the deficiency, and to require the professor of physiology to make an exposition of the outlines of comparative anatomy, to such an extent, at least, as may be necessary to enable the student to appreciate the force of the evidence upon which the modern doctrines of physiology mainly rest.

"5. *Resolved*, That to insure the efficient and beneficial operation of the proposed measures of reform, the Association considers it essential that some uniform system of examining candidates for admission into the ranks of the medical profession, in addition to the *collegiate examinations for degrees*, should be adopted in all the States of the Union.

"6. *Resolved*, That the Association regards as auspicious omens of future progress, the already improved character of our medical literature, and the evidences of an increasing desire, on the part of a respectable number of medical students, for a higher grade of professional education, as exhibited in the patronage extended to extra-collegiate organizations for practical teaching; and that, in view of such encouraging signs, it cherishes an abiding conviction that more thorough and general reforms will be ultimately, though gradually, accomplished."

We have been much gratified by the tone and tenor of the report, of which we have given above a very imperfect analysis. The author does not satisfy himself with merely enumerating the leading defects in the present system of medical education in the United States; and with simply deploring their existence, and the little influence which the action of the Association has heretofore had in effecting their removal. Admitting with perfect candor the difficulties and obstacles which stand in the way of effecting a radical reform in medical instruction, and of elevating it to the desired standard, he is, nevertheless, inspired with full confidence that, by an honest and zealous co-operation on the part of the great body of the medical profession, and a very little patience, the removal of these obstacles and difficulties may, in due time, be accomplished, and indicates the proper means by which so desirable an object may be accomplished, and one of the leading purposes had in view in the organization of the American Medical Association, attained.

We believe that the plan suggested by Dr. Cabell is a perfectly practical one, and demands the serious consideration of the members of the Association. The friends of reform in medical education believe that sufficient time has been spent in discussions and resolutions, and that the period for effective

action has fully arrived. Let then the Association, instead of again appealing to our medical schools for a prolongation of their respective lecture terms, the enlargement of their courses of instruction, and the requirement of a more thorough and complete preparation on the part of those upon whom they confer the honours of the doctorate, take the entire subject in its own hands, and decide at once what shall be the qualifications of those who shall be admitted and recognized as legitimate members of the medical profession. Let the latter refuse to recognize the mere possession of a diploma from a medical college as a sufficient passport to entitle its possessor to enter its ranks. In this manner, a broad line of distinction would be established between the well-instructed physician and the mere medical graduate, and no fear need be entertained that the public would not in time perceive and acknowledge the more solid claims of the first to their confidence in the hour of sickness and of peril.

Passing by, for the present, the report of Dr. Sutton on the Epidemics of Kentucky and Tennessee, we come to the highly interesting paper of Dr. R. S. Holmes, of St. Louis, on Erysipelas.

The views of the author, though somewhat loosely expressed, and thrown together with but slight regard to logical arrangement, are, nevertheless, deserving of close attention. They are, we believe, in the main, correct. Everything connected with the history and etiology of erysipelas would appear to mark it as a constitutional disease. Even when the result of a wound or other injury, it is evidently the condition of the patient's system which gives to the resulting inflammation the erysipelatous character. We are not quite prepared, we confess, to subscribe to the opinion advanced by Dr. H., that erysipelas is a "blood poison—a blood disease"—that "something is in the blood, requisite to be thrown off, nature doing it by mucous, serous, by glandular, or by skin structure."

"Previous to this apparent inflammatory action, however," remarks Dr. H., "the system in general has given signs of suffering; there is a chill followed by fever; or fever sets in from the commencement, pains in the limbs, or body; uneasiness, derangement of biliary, stomach, or intestinal secretion; flushed face; pains in the head; and very often oppression about the throat or salivary glands; in every idiopathic or severe traumatic case of erysipelas, the constitutional precede the local symptoms. There are, doubtless, cases of the disease where no external sign is given of its presence, where the tendency occasionally manifested by it to seize on serous, instead of mucous or cuticular tissue, is in existence from the onset. We hold that the peritoneum, the pleura, or the arachnoid may take on the erysipelatous inflammation as certainly as the lining membrane of the fauces, but is not confined to those parts; it can no more be called a dermal disease than it can be called a peritoneal disease.

"The exudation to which an erysipelatous cause gives rise is of a serous character. This exudation of erysipelas is greater in amount in regard to its serum, and smaller in amount in the nuclei of pus cells, or of fibrin. This may be readily supposed to be its character; for it shows no tendency to the reparative process, is thrown forth in such an amount, at times, as to burrow through the surrounding tissues, and even, as in the case of 'black tongue,' either by its own tendency to decay, or by the severance of continuity of parts, to assume the gangrenous character. We see no reason why erysipelas may not cause death without any structural lesion, as the poison of malaria often does, or the bite of a serpent."

The general peculiarities of the effusion which takes place in erysipelatous diseases, seem to Dr. H. to be:—

"A likeness at first to serum; a want of any tendency in neighbouring parts to absorb it; a subsequent change into a yellowish, turbid, ichorous, or imper-

fect pus formation ; the comparative inability to maintain its life when in contact with living structures for any length of time ; its tendency to cause tissues in contact with it to assume its own state of decay ; the infrequency of its assuming the true pus, or adhesive, or fibrinous type of epigenesis."

The exudation of imperfect serum or pus which Dr. H. describes as the result of erysipelatous inflammation may, he believes, "be viewed as a purely diseased state of the secreting vessels of the part ; which secretion itself acts as an irritant or poison to the part, or neighbouring parts, or to the system at large, betokening an improper state of the system as regards its curative powers."

There is evidently a close relationship between certain forms of phlebitis and the resulting pyemia, and erysipelas. Dr. H. remarks:—

"Concerning what has been called the absorption of pus, and its subsequent deposition in a near or remote part, we hold that this doctrine is not favoured by either physiology or pathology. The fact of pus being secreted in liver, in lung, in cervical, axillary, or lymphatic gland, after operations or wounds on the extremities, or as a sequence to an inflamed uterus, has been long known ; but we find little to countenance the belief that pus is taken up as such, and deposited again in a distant part. The sudden disappearance of abscesses may be accounted for without supposing that the pus globule, in its integrity, has entered the circulation ; but even on the supposition that it has, it is by no means probable that all these globules would be caught up by some particular gland, leaving aside the very doubtful possibility of the size of the globule permitting it to pass through the capillaries. These deposits of pus, too, are found in distant parts ; while the primary offending wound, or inflamed surface, has formed little or no pus. In fact, they are more frequently found under such circumstances, and particularly in inoculated wounds. As well as we can understand the meaning of terms, this is what is generally called the phlegmonous inflammation ; but it is an inflammation of essentially the same kind as the erysipelatous, accompanied by the same symptoms, and cured by the same means. It is the absorption of imperfectly eliminated material ; which material (in a state of decay, after it has been thrown forth by the part without accomplishing ulterior objects) has been absorbed or taken into the circulation, causing in the blood, or in the part where it is set down, for expulsion, its own act of decay—or effort of the system to expel it. We suppose this is the whole idea of the secondary deposition of pus. A decomposing atom, if you choose, a non-laudable deposit of pus, has occurred, having within it the very character of decay. This decay may take place within the blood after absorption, or within a part, as any gland, after deposition, causing an inflammatory exudation about the part, and a pus secretion from this as the readiest means of expelling the intruding substance. We think this the whole process of pus deposits—a true phlegmonous erysipelas of deep-seated parts ; for you will observe about these parts, should the deposition be, we will say, in a neck gland, that about it, is the true erysipelatous inflammation, and the constitution suffers in the way it is wont to do, had the disease displayed itself in superficial, instead of deep-seated parts. The phlegmonous undermining the tissues of an arm, or other part, burrowing among the muscles, and dissecting them out by the inflammation of their connecting areolar tissue, and giving exudation to a copious fetid discharge, has received the name of deep-seated erysipelas, phlegmonous erysipelas, phlegmonous inflammation of the areolar tissue, etc. This inflammation has most probably come on at first with an erysipelatous blush on the arm, or with distinct points of pus deposition occurring here and there. The inflammations, we hold, are all a difference of degree, not of kind ; more common, it is true, to the superficial than deep-seated parts ; but commencing with the same chill, or cold stage, with a fever and constitutional symptoms of the same kind ; showing the like intermitting character, with the like biliary, or chylipoietic derangement, and cured by the same means."

Though not clearly expressed, the views set forth in the foregoing extract

from Dr. H.'s paper are deserving of deep attention. It may excite surprise that the author has not referred to the observations of M. Lebert, and the opinions of Rokitansky on pyæmia; the leading views expressed by both these writers correspond in many respects with those advanced by Dr. Holmes.

Dr. H. admits the now, we think, well-established fact that puerperal fever may result from the same atmospherical cause that is productive of erysipelas, of the epidemics of which it is an almost invariable concomitant.

"Peritoneal inflammation, arising from childbirth, we hold," says Dr. H., "is not strictly a proper term; it is an inflammation of surrounding parts—of uterus, ligaments, neighbouring intestine; all these are frequently partially glued together, or bathed in the same sero-purulent exudation, engorged with blood, or partially so in patches, and thickened and improperly lubricated."

We have no desire to analyze the therapeutics of erysipelas as laid down in the paper before us. Suffice it to say, that the chief, almost the only, remedies Dr. H. relies on are *large* doses of quinia, bloodletting, and tartarized antimony. We are much better pleased with the views of the author in relation to the pathology of erysipelas, tainted though they may be by a few hypotheses of doubtful accuracy, and some expressions of equivocal significance, than we are with his plan of treating the disease, and the *rationale* adduced by him of the *methodus medendi* of the remedies he relies upon to arrest its course.

The next paper is "A Report on the Medicinal and Toxicological Properties of the Cryptogamic Plants of the United States," by F. Peyre Porcher, M. D., of Charleston, S. C.

This is an able and valuable paper, one which has evidently cost its author a vast amount of labour. To bring together, as he has done in this report, the leading facts that have been developed by various observers in relation to the properties and probable available uses of the cryptogamous plants met with in this country; to indicate their respective localities, and to identify their species and varieties, so as to be able correctly to appropriate the recorded observations in relation to their curative, poisonous, or other properties, was, we can readily conceive, a task of no trifling character, demanding considerable research, much time, and no little patience, more especially as the entire subject belongs to a department of inquiry which has had few labourers in this country. The present report required, therefore, the embodying of a comparatively large amount of material, in order that our knowledge of the subject might be brought up to the present day, and that future inquirers, being placed in possession of what has been already accomplished, may proceed directly to more experimental researches.

The real value of this contribution of Dr. Porcher, as well to the *materia medica* of our country as to its resources, will, we fear, be properly appreciated by but few. The report is not one of which any satisfactory or useful analysis can be given. To acquire a clear conception of the facts it comprises, and their practical application, it must be closely studied in all its details.

The present volume contains three reports on the epidemics of Kentucky and Tennessee; of Ohio, Indiana, and Michigan; of Louisiana, Mississippi, Arkansas, and Texas. They are all replete with interesting and valuable observations, bearing on the etiology, pathology, and therapeutics of the prevalent diseases of those sections of the Union, founded upon observations chiefly made during the year 1853.

The first two, prepared, respectively, by Drs. W. L. Sutton and George Mendenhall, present a very good digest of the topography and meteorology of the States embraced in them, illustrated by an excellent map and copious tables.



The third report on epidemics is by Dr. E. D. Fenner, of New Orleans, and is devoted mainly to a history of the yellow fever of 1853. So far as regards the origin, spread, and progress of the disease in the city of New Orleans and other portions of the State of Louisiana, its history is minutely detailed; while, in relation to its prevalence in different parts of Mississippi, Arkansas, and Texas, many interesting facts, though less complete and continuous, are presented; the whole affording valuable materials for the pathologist, in his investigation of the etiology and leading characteristics of the fever in question.

The entire series of reports on epidemics, presented at this session of the Association, are well drawn up, and offer much to interest and instruct the medical inquirer. We had intended to present a number of excerpts from them, but we are admonished, by the space we have already occupied, and the difficulty of selecting from a mass of facts, all of which equally press themselves upon our notice, of the necessity of foregoing our intention; at the same time, we recommend a careful perusal of these reports to all our readers.

A short paper "On the Identity of Bilious and Yellow Fevers," by Dr. Linton, may be taken in connection with the reports on epidemics. The title of this paper appears to us to be a misnomer. Though the writer sets out with declaring that bilious remittent and yellow fever are "*specifically identical*"—which, we may remark, in passing, is rather a strange form of expression—nothing is said of the evidence upon which this identity is predicated, but the entire paper is taken up with an exposition of the author's views as to the cause of bilious and yellow fever.

For the benefit of our readers, we here present them with all that he says upon this subject, merely remarking that the only arguments he offers in their support are more specious than solid:—

"It is well known that a richer diet is required by the inhabitants of cold countries and seasons than by those of hot countries and seasons. It is known that a portion of the food forms the *materiel* of combustion in the system, and is eliminated from it in the form of carbonic acid and water; and direct experiments have shown that, in man, twice as much, and even more, carbonic acid is eliminated at 32° Fahrenheit as at 86°. This all of us would expect; for twice as much food, rich in hydrocarbon, is taken in cold latitudes as in the warm and hot, and twice as much combustion is required in the former as in the latter for the purpose of keeping up the due amount of animal heat.

"According to these facts, is it not clear, that northern strangers exposed to a southern sun will suffer the effects of retained hydrocarbon? If a man who eliminates twelve ounces of carbon *per diem* at St. Paul's, on the Mississippi River, should pass suddenly to New Orleans, is it not clear that about one-half of this material would be retained in his blood? Is it not a matter of demonstration that he would be poisoned by the retention of those very matters which, in a cold region, are necessary to health? Now, why may not this poison be the cause of yellow fever? It is proved to exist; and certainly this bilious state of the blood, thus caused, may produce hepatic congestion, portal congestion, jaundice, black vomit, &c. Indeed, the hydrocarbon is the very 'stuff' of which bile is mainly formed. No wonder that its retention in large quantities should cause bilious fever, and even yellow skin and black vomit.

"This view of the cause and nature of yellow fever, explains the fact that strangers from the north are *mostly* affected by it. It explains the fact that those who remain mostly within doors, as old men, and children, and women, are not so liable to it as those who exercise immoderately under a burning sun. It shows how it is that those who have long resided in hot climates mostly escape, and why they do not always escape. It explains the exemption of prisoners from its attack; they live low, and are not exposed to great heat. In a word, I respectfully submit that this *theory* accords with all the facts. I do not deny the malign influences of bad air, and confined air, where it exists. All I say is, that such an external poison is not a *sine qua non* to the production

of the disease. When such a state of the air exists, it renders the disease worse than otherwise it would be. Nor do I deny that the retention of other matters may have something to do in causing the disease. Often, too, a person may escape yellow fever by a bilious diarrhœa. The skin also depurates more in hot than in cold climates and seasons."

The last of the papers of a strictly professional character contained in the present volume of *Transactions*, is the essay of Dr. David Brainard, of Illinois, on a new method of treating ununited fractures and certain deformities of the osseous system, to which a prize of one hundred dollars was awarded by the Association.

The object of Dr. Brainard's essay is, 1. To establish, by experiment, the principles upon which the treatment of ununited fractures should be conducted; and to show that these principles are applicable to the human subject. 2. To propose a new method of treatment for certain deformities which result from true ankylosis, union of fractures in an angular position, rachitic curvature, &c.

The essay is divided into three parts. 1. Experimental researches on the effects of foreign bodies when allowed to remain in contact with the osseous tissue, and on certain wounds of the bones. 2. Treatment of united fractures by subcutaneous perforation of bone, with cases; and 3. Treatment of deformities of the bones by subcutaneous perforation, with experiments.

From the facts detailed in the first part, Dr. B. considers that the following deductions are fully justified:—

"1. Foreign bodies of every kind, placed or allowed to remain in contact with any part of a bone, in a manner to keep up suppuration, produce absorption of it, and have no tendency whatever to give rise to the production of callus. The use of setons, pegs, wires, and foreign bodies of every description, as a means of promoting the formation of callus, is a practice not founded on correct principles, and is often dangerous. The seton is more properly employed for the purpose of dividing a bone, or keeping up a false articulation, than for uniting it.

"2. Sequestra and foreign bodies imbedded in bone, may be brought to the surface when, by perforation or otherwise, instruments or ligatures can be so attached to them as to draw them permanently, with but a moderate degree of force, in that direction. As soon as they press against the living bone, they cause its absorption in the direction towards which they are drawn.

"3. That power of absorption of bony tissue attributed to the periosteum and the medullary membrane, exists also in the substance of the bone itself, as is proved by the insertion of pegs into perforations of bone; absorption taking place around them not only at the surfaces, but at all the intervening points. We have employed the term absorption, in accordance with received usage, to indicate that enlargement of the perforation which takes place around the peg, although it is not certain that the bone is absorbed. It is quite as likely that it is disintegrated by ulceration."

In Chapter II. Dr. B. inquires into the effects of foreign bodies on the formation of callus. The facts he presents in elucidation of this subject, justify, he considers, the conclusion, that foreign bodies which keep up suppuration, not only prevent the formation of callus to a certain distance around them, but produce absorption of callus already deposited when placed in contact with it. The practical deduction may be drawn, he remarks, that setons, pegs of ivory, &c., are suitable means to be employed for promoting the removal of deformed callus and certain exostoses.

Solutions of iodine injected between the extremities of fractured bones, with a view of producing union, Dr. B. has found to act like foreign bodies—to produce inflammation and necrosis, and to prevent the formation of callus.

After a consideration of wounds of bones, and the circumstances in which they give rise to callus, or union without it, and the state of the parts in ununited fracture, Dr. B. proceeds to the treatment of ununited fractures. His own plan of treatment, is, by means of an instrument with a point somewhat awl-shaped, but more pointed in the middle, with the view of avoiding as much as possible the formation of chips, to produce wounds of the fractured ends of the bones, transfixing at the same time whatever tissue may be placed between them. After transfixing the fractured extremities and intervening tissue in one direction, the instrument is to be withdrawn from the bone, but not from the skin, its direction changed, and other perforations made in the same manner. Dr. B. thinks it better to commence, in most cases, with not more than two or three perforations, in order that the effect produced shall not be too severe. On withdrawing the instrument, collodion is to be placed upon the point of puncture.

"Each of the different parts of the operation is," according to Dr. B., "essential to its success. The division of the tissue situated between the fragments, would, of itself, have but little effect; combined with scratching their extremities, its effect is not great, as we have demonstrated by experiment; but, when accompanied by wounds of the bone, there is a very permanent and efficient action produced, which puts the extremities in a condition to join the soft parts in effecting union. This can be rendered greater by increasing the number of punctures, or using an instrument of large size. The operation is to be followed by the application of suitable splints, or apparatus for the purpose of securing immobility. It should be repeated from time to time, and carried to a greater or less extent, as the effects produced may indicate."

To prevent the danger of the perforator passing too deeply, slipping from the surface of a bone, or injuring any vessel, Dr. B. has devised a means for regulating its action. This can only be understood by a reference to the drawing given of it, and the accompanying description.

Chapter IX. treats of the application of perforation of the bones to the cure of certain deformities, by means of interstitial fracture, or bending. The cases in which it is proposed to apply it are:—

"1. Perfect ankylosis by bone, or fibrous adhesions too firm to be separated by moderate force, and where the member is in a position to be useless. In this case its use is recommended with a view of straightening the member, where the original disease has been entirely removed.

"2. Fractures united in such a position as to render the limb useless, or from angularity of the fragments, greatly to incommode the patient. In this case, it is also employed for the purpose of straightening the member, after consolidation is perfect.

"3. Deformity from rachitis, and mollities ossium, where the disease giving rise to the deformity has been perfectly cured.

"4. For the purpose of facilitating the fracture of the femur, and formation of a false joint, in case of ankylosis of that bone with the pelvis."

"The method of applying the treatment will depend upon the object to be obtained. When it is required to weaken the bone as much as possible, in order to facilitate its fracture, it will only be necessary to perforate it several times in one direction, and then, withdrawing the instrument, to repeat the perforation from another point.

"The inflammation thus excited will, in a few days, soften the bone sufficiently to render its fracture very easy.

"If it were desired to effect but a partial fracture, the perforations and weakening should be made mostly on one side, and the same rules followed as in the other case.

"When the object is merely to bend the bone, Dr. B. would recommend, that the perforations be made at three different points, and repeated from time to

time with instruments of smaller size, until the enlargement and softening have thoroughly been effected, and then the gradual application of force, by means of a suitable apparatus, making superficial perforations to soften the surface and prevent the danger of fracture."

In addition to the application of this method, as above described, Dr. B. has employed it for simple perforation of bone, in inflammation tending to abscess. In a case of this kind, where the disease was situated on the internal surface of the tibia, below the knee, two perforations gave relief from a violent pain, without giving rise to suppuration.

Dr. B. lays no claim to originality for the treatment of ununited fractures described by him. He acknowledges that several surgeons of the present epoch have sought to attain the same end; but no one of them, as far as he knows, has "either demonstrated the principle upon which it reposes, or laid down the rules by which it should be performed, or contrived an instrument by which it could be carried into effect with safety and facility." It is his hope that the operation he proposes will be "regarded as an improvement"—and that, "as an attempt to apply the principles of physiology to practical surgery, it will meet with the favourable consideration of the profession."

We feel well persuaded that the essay of Dr. Brainard will be received as a valuable contribution to a most important branch of chirurgery—that of which the entire resources are directed to the removal of deformity and to the restoration to limbs, rendered useless by accident, the greater portion, if not all of their normal shape and functions.

An account of the railroad accident which occurred in May, 1853, and caused the death of seven physicians, who were returning to their homes after attendance as delegates at the session of the American Medical Association, held in New York, with short biographical sketches of these gentlemen, intended as "a suitable method of commemorating that melancholy event, and "the worth and professional character" of the members of the Association who were numbered among its victims; with the report of the Committee of Publication and treasurer, and the catalogue of the officers and permanent members of the Association, complete the contents of the present volume.

By a resolution of the Association, it was provided that a copy of the constitution of the Association should be appended to each volume of the *Transactions*. We regret that the Committee of Publication has not complied, for reasons which are no doubt perfectly satisfactory, with the provisions of this resolution. But few, if any members of the Association, have in their possession copies of its constitution, embracing the several amendments that have been made to it since its original adoption, and not a little inconvenience is liable to result from the difficulty there now is, in referring at once to its provisions in reference to any given question that may arise in regard to them.

D. F. C.